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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,682	07/30/2001	Yasutaka Ito	110580.01	9838

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EXAMINER

PAIK, SANG YEOP

ART UNIT	PAPER NUMBER
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3742

DATE MAILED: 09/11/2003

22

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/916,682

Applicant(s)

ITO, YASUTAKA

Examiner

Sang Y Paik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 15, 16.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 9, 11-16 and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al (US 6,080,970) or Arami et al (US 5,904,872) in view of Koontz (US 5,877,473).

Yoshida et al or Arami et al disclose the ceramic heater claimed including a disk-shaped ceramic substrate with a heat-generating pattern, having a combination of spiral and bending pattern, disposed on the surface of the ceramic substrate, a semiconductor wafer heated on the surface opposite to the surface of the ceramic substrate. Arami et al further show that the disk-shaped ceramic substrate has the diameter of 8 inches or larger to accommodate a wafer having a diameter of 8 inches or 203 mm. Yoshida et al or Arami et al teach that the ceramic substrate can be made of aluminum nitride. However, Yoshida et al and Arami et al do not show that the bending portion describes an arc having a curvature radius within a range of 0.1 mm to 20 mm.

Koontz shows a heating pattern having a bending portion whose curvature radius is within the claimed range to keep the width of heating element consistently equal. Koontz teaches that such curvature reduces cold and hot spots along the heating element. In view of Koontz, it would have been obvious to one of ordinary skill in the art to adapt Yoshida et al or Arami et al

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with the claimed curvature bending to eliminate hot and cold spots and thus provide an uniform heating across its heating surface.

With respect to claims 14 and 21, it would have been obvious to one of ordinary skill in the art to modify the diameter of the ceramic substrate more than 300 mm or more since the size of the ceramic substrate would have been dependent upon the size of the wafer that is being heated by the ceramic substrate and to provide sufficient heating area to encompass the entire wafer area for uniform heating across the wafer.

3. Claims 10 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al or Arami et al in view of Koontz as applied to claims 9, 11-16 and 18-22 above, and further in view of Ito et al (US 6,072,162) or Furuya et al (US 6,084,215).

Yoshida et al or Arami et al in view of Koontz discloses the ceramic heater claimed except having through holes for inserting supporting pins.

Ito et al and Furuya et al shows a wafer supporting heater having a plurality of through holes for inserting supporting pins to support a wafer. In view of Ito et al or Furuya et al, it would have been obvious to one of ordinary skill in the art to adapt Yoshida et al or Arami et al, as modified by Koontz, with the through holes to provide the supporting pins so that the wafer can be conveniently moved to or from the ceramic substrate during the wafer treating process.

Response to Arguments

4. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y Paik whose telephone number is 703-308-1147. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.

S.Y.P.

Sang Y Paik
Primary Examiner
Art Unit 3742

syp